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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/092,613	03/08/2002	Lars J. Stenberg	45900-000561/US	8641
30593	7590	11/15/2004	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C. P.O. BOX 8910 RESTON, VA 20195			GRIER, LAURA A	
			ART UNIT	PAPER NUMBER
			2644	

DATE MAILED: 11/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/092,613	STENBERG, LARS J.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Laura A Grier	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 14, 16-21, 24, 25 and 27-33 is/are rejected.
- 7) ☒ Claim(s) 12, 13, 15, 22, 23 and 26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7/3/03 and 12/13/02</u>   | 6) <input type="checkbox"/> Other: ____.                                    |

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## DETAILED ACTION

### *Claim Objections*

Claims 1 and 29 are objected because there is insufficient antecedent basis: respectively, claims 1 and 29, last line, recite "the DC input". Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1-2, 14, 16, 18-19, 25, 27, and 29** are rejected under 35 U.S.C. 102(b) as being anticipated by Ehara, U. S. Patent No. 5577129.

Regarding claim 1, Ehara discloses an amplifier circuit for electret condensor microphone. Ehara's disclosure comprises a capacitor (120) coupled between and electret condensor microphone (ECM) –103, and a DC input of an amplifier (102) – abstract, col. 2, lines 16-20 and 40-41, which reads on a series capacitor between a condensor microphone transducer and a DC input of an amplifier.

Regarding claim 18, Ehara discloses an amplifier circuit for electret condensor microphone. Ehara's disclosure comprises a capacitor (120) coupled between and electret condensor microphone (ECM) –103, and a DC input of an amplifier (102) –

abstract, col. 2, lines 16-20 and 40-41, which reads on providing a signal from the condensor microphone transducer to a capacitor and sending a resultant signal from the capacitor to a DC input of an amplifier.

Regarding claim 29, Ehara discloses an amplifier circuit for electret condensor microphone. Ehara's disclosure comprises a capacitor (120) coupled between and an electret condensor microphone (ECM) –103, and a DC input of an amplifier (102) – abstract, col. 2, lines 16-20 and 40-41, which reads on inserting a capacitor between a condensor microphone transducer and a DC input of an amplifier.

Regarding claims 2 and 19, Ehara discloses everything as applied above (see claim 1 and 18, respectively). Ehara inherently discloses the capacitor preventing leakage current as evident by the fact that the capacitor cuts a DC component.

Regarding claims 16 and 27, Ehara discloses everything as applied above (see claim 1 and 18, respectively). Ehara discloses an electret condensor microphone (ECM) outputting a signal to an amplifier, which reads on the preamplifier circuit amplifying an electric signal from an electret condensor microphone (ECM).

Regarding claims 14 and 25, Ehara discloses everything as applied above (see claim 1 and 18, respectively). Ehara discloses resistor 121, which can constitutes as impedance (col. 2, lines 42-43).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 4-5, 30 and 32-33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ehara in view of Garcia et al. (herein, Garcia), U. S. Patent No. 6275593.

Regarding claims 4, 30, and 32, Ehara discloses everything claimed as applied above (see claim 1, and 29, respectively). However, Ehara fails to disclose the amplifier and/or capacitor integrated as a monolithic chip. Garcia discloses a signal input (28), which may be an input of a microphone, which is coupled with a capacitor (12) with an input into and amplifier (30), wherein the circuitry may be integrated as a monolithic chip (col. 9, lines 44-52; col. 10, lines 1-6).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Ehara and Garcia by integrally configuring the amplifier and/or capacitor on a monolithic chip for utilization in compact and portable devices such as a hearing aid, cellular and other portable telephones, etc as taught by Garcia.

**Claims 2 and 31** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ehara and Garcia.

Regarding claims 2 and 31, Ehara and Garcia disclose everything claimed as applied above (see claims 4 and 32, respectively). However, Ehara and Garcia fail to disclose the capacitor external to the monolithic chip. The position of various

components of a circuit is known to vary for integrated circuits. Thus, it would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Ehara and Garcia by applying the capacitor external the monolithic chip as desired for the purpose of optimizing the size/structure and function of the chip.

**Claims 5 and 33** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ehara and Garcia.

Regarding claims 5 and 33, Ehara and Garcia disclose everything claimed as applied above (see claims 4 and 32, respectively). However, Ehara and Garcia fail to disclose the monolithic chip made in a modern IC technology comprising one of a CMOS, JFET, P- or N-type MOSFET and MESFET. The examiner takes official notices that such IC technology such as the CMOS and MOSFETs were well known the art for configuring monolithic chips for amplifier. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Ehara and Garcia by implementing the monolithic chip with CMOS or MOSFETS, which are commonly used components in the art, for the purpose of ensuring low distortion and efficient noise reduction in the signal transmission.

**Claims 6-10 and 20-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ehara in view of Wang, U. S. Patent No. 6448599, and further in view of Sun et al. (herein, Sun), U. S. Patent No. 5930584.

Regarding claims 6-10 and 20-21, Ehara disclose everything claimed as applied above (see claims 1 and 18, respectively). However, Ehara fails to disclose the capacitor as a low leakage capacitor of the floating plate type made as a polysilicon-to-polysilicon, polysilicon-to-metal, and metal-to-metal capacitor or a combination thereof (herein, various material structure) compatible to modern IC technology.

Regarding the low leakage capacitor of the floating plate type and the various material structure, Wang discloses a semiconductor device with capacitor which has a floating layer, which indicates a floating plate type, wherein the capacitor may be composed of polysilicon-to-polysilicon, polysilicon-to-metal (or alternately, metal-to-polysilicon) or metal-to-metal electrodes (col. 3, lines 1-14, col. 4, lines 53-67), which reads on the various material structures compatible to modern IC technology.

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Ehara by providing a capacitor of the floating plate type which may be composed of the various material structures for the purpose of enabling various integrated circuit techniques that are commonly used in the art as taught by Wang.

Further in the respect to the low leakage characteristic of the capacitor, Sun discloses a capacitor with low leakage characteristic for semiconductor devices (abstract).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Ehara and Wang by implementing a low

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leakage characteristic capacitor for the purpose of enable a small or low leakage of current to the amplifier.

**Claims 17 and 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ehara in view of Rombach et al., U. S. Patent No. 6088463.

Regarding claims 17 and 28, Ehara disclose everything claimed as applied above (see claims 1 and 18, respectively). However, Ehara fails to discloses an electrical signal from a silicon-based condensor microphone.

Regarding the silicon-based condensor microphone, Rombach et al. (herein, Rombach) discloses a solid state silicon-based condensor microphone (abstract).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Ehara by providing a silicon-based condensor microphone for the purpose of enabling a transducer that less sensitive to electrical interference.

**Claims 11 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Ehara in view of Akino, U. S. Patent No. 6453048.

Regarding claims 11 and 22, Ehara discloses everything claimed as applied above. Ehara fails to specifically disclose an impedance circuit comprising pair of crossed coupled diodes.



Regarding the diodes, Akino discloses an impedance converter for an condensor microphone. Akino's circuit comprises diodes 1A and 1B coupled the amplifier, which reads on diodes (abstract).

It would have been obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of Ehara by providing a pair of cross coupled diodes coupled to the amplifier for the purpose of suppressing disturbing characteristics such as noise and variations of a bias as taught by Akino.

Claims 12-13, 15, 22-23 and 26 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Laura A Grier whose telephone number is (703) 306-4819. The examiner can normally be reached on Monday - Friday, 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W. Isen can be reached on (703) 305-4386. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Laura A. Grier". The signature is fluid and cursive, with the first name "Laura" being more prominent.

Laura A. Grier

November 10, 2004